



# **A Socioeconomic Profile of Recreating Visitors to the Outer Coast of Washington and the Olympic Coast National Marine Sanctuary: Volume 1, 2014**

**U.S. Department of Commerce**  
National Oceanic and Atmospheric Administration  
National Ocean Service  
**Office of National Marine Sanctuaries**



April 2016

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## **Abstract**

This report is part of a series of reports that focus on outdoor recreation activities undertaken in 2013-14 on the Outer Coast of Washington by households in the State of Washington. The primary focus was on the entire Outer Coast of Washington to support the State's Marine Spatial Planning Initiative and the Olympic Coast National Marine Sanctuary management plan objectives in socioeconomics. For the OCNMS, socioeconomic profiles for the legal boundaries, the boundaries expanded to a two kilometer buffer along the coast, and a small section of the Port Angeles area. In 2014, a survey of recreators on the State of Washington's Outer Coast was conducted by Point97 through an Internet Panel representative of all households in the State of Washington. The Internet Panel was created and the survey implemented by Knowledge Networks, Inc. The Panel included 5,079 responses over two waves of surveys. Socioeconomic profiles presented here include demographic profiles of users (e.g. age, gender, race/ethnicity, marital status, education level, household size, housing type, employment status, household income and place of residence, (e.g. zip code and county); uses (activity participation rates, person-trips and person-days by activity type), and expenditures per person-trip, per person-day, and total expenditures by expenditure category. Volume 2 of the series translates the expenditures into the economic impacts/contributions to the local economies in terms of output/sales, value-added (the equivalent of Gross Regional Product), income and employment, including multiplier impacts. Volume 3 addresses importance-satisfaction ratings for natural resource attributes, facilities and services. Volume 4 is a Technical Appendix that explains the survey sampling methodology and the methods of estimation for Volumes 1-3. Two other volumes are under development on the non-market economic values and how those values change with changes in natural resource attributes and user characteristics.

## **Key Words**

Coastal recreation, marine recreation, Outer Coast of Washington, Olympic Coast, demographics, expenditures, socioeconomics, economics

## Key Findings

### Use

- In 2013, 40.7% (1.07 million) of the State of Washington's 2.62 million households participated in outdoor recreation activities on the Outer Coast of Washington.
- These recreating households took 5.2 million person-trips and spent 13.1 million person-days recreating on the Outer Coast.
- 662 thousand person-days or 5% of all person-days of recreation on the Outer Coast were spent in the OCNMS-Legal jurisdiction/sub-area.
- 2.1 million person-days or 16% of all person-days of recreation on the Outer Coast were spent in the ONMS – 2 km jurisdiction/sub-area.
- 149 thousand person-days or 1.1% of all person-days of recreation on the Outer Coast were spent in the Port Angeles jurisdiction/sub-area.

### Top Three Recreation Activities

- **Outer Coast:** Beach Going was the number one activity with 1.8 million person-days, followed by Sightseeing with 1.6 million person-days and Watching Wildlife from Shore with 1.1 million person-days.
- **OCNMS-Legal:** Beach Going was the number one activity with 92.0 thousand person-days followed by Sightseeing with 81.0 thousand person-days and Wildlife Watching from Shore with 56.2 thousand person-days.
- **OCNMS-2 km:** Beach Going was the number one activity with 308.3 thousand person-days followed by Sightseeing with 297.5 thousand person-days and Hiking/Biking with 196 thousand person-days.
- **Port Angeles:** Sightseeing was the number one activity with 25.1 thousand person-days followed by Beach Going with 22.7 thousand person-days and Watching Wildlife from shore with 17.9 thousand person-days.

### Comparative Demographics

- No statistically significant differences were found between jurisdiction/sub-areas for Age, Head of Household, Household size, Household Size by Age, Household Type, Ownership of Living Quarters, Marital Status, Current Employment Status or living in a Metropolitan Statistical Area.
- Nine statistically significant differences were found between jurisdiction/sub-areas for Gender, Race/Ethnicity, Education Level and Household Income.

## **Gender:**

**Outer Coast versus Port Angeles:** A higher proportion of recreating visitors to Port Angeles were male (76.06%) versus 50.36% for all recreating visitors to the entire Outer Coast.

**OCNMS-2 km versus Port Angeles:** A higher proportion of recreating visitors to Port Angeles were male (76.06%) versus 52.64% for the OCNMS-2 km jurisdiction/sub-area.

## **Race/Ethnicity:**

**OCNMS-Legal versus Port Angeles:** A higher proportion of recreating visitors to the OCNMS-Legal jurisdiction/sub-area were White, Non-Hispanic (73.53%) versus those who visited Port Angeles (57.41%). A higher proportion of Port Angeles recreating visitors were Hispanic (27.46%) versus 4.97% of recreating visitors to the OCNMS-Legal jurisdiction/sub-area.

**OCNMS-2 KM versus Port Angeles:** A higher proportion of recreating visitors to the OCNMS-2 km jurisdiction/sub-area were White, Non-Hispanic (76.43%) versus those who visited Port Angeles (57.41%). A higher proportion of Port Angeles recreating visitors were Hispanic (27.46%) versus 6.52% of recreating visitors to the OCNMS-2 km jurisdiction/sub-area.

## **Education level:**

**Outer Coast versus OCNMS-Legal:** Recreating visitors to the OCNMS-Legal jurisdiction/sub-area were more highly educated than those recreating visitors to the entire Outer Coast. 43.66% of OCNMS-Legal jurisdiction/sub-area recreating visitors had a Bachelor's Degree or Higher versus 31.45% for all recreating visitors to the Outer Coast. 15.87% of recreating visitors to the OCNMS-Legal jurisdiction/sub-area had a High School or less education, while 29.89% of all recreating visitors to the Outer Coast had a High School or less education.

**Outer Coast versus OCNMS-2 km:** Recreating visitors to the OCNMS-2 km jurisdiction/sub-area were more highly educated than those recreating visitors to the entire Outer Coast. 41.44% of OCNMS-2 km jurisdiction/sub-area recreating visitors had a Bachelor's Degree or Higher versus 31.45% for all recreating visitors to the Outer Coast. 18.45% of recreating visitors to the OCNMS-2 km jurisdiction/sub-area had a High School or less education, while 29.89% of all recreating visitors to the Outer Coast had a High School or less education.

## Household Income:

**Outer Coast versus Port Angeles:** Recreating visitors to the Port Angeles jurisdiction/sub-area had higher household incomes than all recreating visitors to the Outer Coast. 63.09% of recreating visitors to the Port Angeles jurisdiction/sub-area had household income greater than or equal to \$85,000 versus 40.54% for all recreating visitors to the Outer Coast.

**OCNMS-2 km versus Port Angeles:** Recreating visitors to the Port Angeles jurisdiction/sub-area had higher household incomes than all recreating visitors to the Outer Coast. 63.09% of recreating visitors to the Port Angeles jurisdiction/sub-area had household income greater than or equal to \$85,000 versus 44.82% for all recreating visitors to the OCNMS-2 km jurisdiction/sub-area.

## Total Expenditures

- **Outer Coast:** Recreating visitors to the Outer Coast spent \$551.56 million.
- **OCNMS-Legal:** Recreating visitors to the OCNMS-Legal jurisdiction/sub-area spent \$30.85 million or 5.6% of all spending.
- **OCNMS-2 km:** Recreating visitors to the OCNMS-2 km jurisdiction/sub-area spent \$101.58 million or 18.4% of all spending.
- **Port Angeles:** Recreating visitors to the Port Angeles jurisdiction/sub-area spent \$8.7 million or 1.6% of all spending.

## Top Four Categories of Spending

- **Outer Coast:**
  - Lodging/Campsite fees: \$139.95 million.
  - Food & Beverages at Restaurants & Bars: \$115.95 million
  - Car Fuel: \$107.9 million
  - Food & Beverages from Stores: \$75.4 million
- **OCNMS-Legal:**
  - Lodging/Campsite Fees: \$9.45 million
  - Food & Beverages at Restaurants & Bars: \$5.8 million
  - Car Fuel: \$5.35 million
  - Food & Beverages from Stores: \$3.24 million
- **OCNMS-2 km:**
  - Lodging/Campsite Fees: \$32.71 million
  - Car Fuel: \$19.32 million
  - Food & Beverages at Restaurants & Bars: \$18.6 million
  - Food & Beverages from Stores: \$11.43 million

- **Port Angeles:**  
Food & Beverages at Restaurants & Bars: \$1.85 million  
Car Fuel: \$1.52 million  
Lodging/Campsite Fees: \$1.50 million  
Shopping and Souvenirs: \$1.13 million

### **Expenditures Per Person-day**

- **Outer Coast:** \$42.03
- **OCNMS-Legal:** \$46.60
- **OCNMS-2 km:** \$48.41
- **Port Angeles:** \$58.26

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# 1. Introduction

## Background

In 2013-14, Point97 and the Surfrider Foundation conducted an Internet survey using a Knowledge Networks Panel, which included a random sample of all State of Washington households. The survey addressed visitation to the Outer Coast of Washington with emphasis on outdoor recreation activities. The survey covered visitation over the past 12 months and included information on detailed recreation activities participated in over the past 12 months and on the last trip. The last trip was important for two reasons: 1) trip expenditures and spatial use by activity type were obtained for the last trip. A special tool developed by Ecotrust/Point97 was used to obtain estimates of spatial use. Demographics were obtained for all panel members. The project was funded by the State of Washington to support their Marine Spatial Planning process.

In 2014, two offices in NOAA's National Ocean Service, the Office of National Marine Sanctuaries (ONMS), Conservation Science Division and the National Centers for Coastal Ocean Sciences (NCCOS), Center for Coastal Monitoring and Assessment, Biogeography Branch partnered to obtain information on the preferences and economic non-market economic values and how those non-market values change with changes in natural resource attributes and user characteristics. NCCOS provided funding and ONMS issued a request for proposals to provide the information. Through the competitive bidding process Point97 was awarded the contract. Point97 proposed a survey using their existing Internet Panel with Knowledge Networks (KN). Modules were designed for a second wave of surveying to include the NOAA objectives. NOAA's objectives were to estimate project parameters to support the Socioeconomic Action Plan for the Olympic Coast National Marine Sanctuary, while also meeting the needs of the State of Washington in their Marine Spatial Planning process.

NOAA's objectives included obtaining information on people's preferences for different marine animals (e.g. seabirds and marine mammals), development of an environmental index for predicting people's non-market economic values, estimation of the non-market economic values, and estimation of how those values change with changes in natural resource attributes and user characteristics. This data was collected in addition to the previously described information on visitation. In this report, the non-market economic values are not addressed; instead a separate technical appendix will address people's preferences for different marine animals, the environmental index, and the non-market economic values.

## Survey Methodology

The survey methodology is presented in Pont97 and Surfrider Foundation (2015), but will be repeated here. The survey was done using the Knowledge Networks, Inc. (KN) panel of the State of Washington households. To accommodate the needs of the State of

Washington and NOAA, KN supplemented their regular panel with additional recruits to expand sample sizes.

The survey was done in two waves. The first wave was conducted from June 13-30, 2014 and included 3,017 households. The second wave was conducted from November 19, 2014 to February 14, 2015 and included 3,112 households. For both waves, there were a total of 6,219 households in the panels. KN recruited panel members to obtain a random sample representative of all households in the State of Washington. The sampling frame included those 18 years or older living in State of Washington households.

**Survey Response Rates.** Out of the 6,129 panel members across both waves, 5,538 households responded or a response rate of 90.36%. For wave 1, the response rate was 100% (N=3,107), while for wave 2 the response rate was 81% (N=2,521).

**Sample Weighting.** KN provided sample weights for the panel to make them representative of all Washington households. KN weighted the sample for four factors; age, gender, race/ethnicity and county of residence. County of residence was included because of the estimation of spatial use. Two sets of weights were provided: weight1 was the sample weight for the regular KN panel members and weight2 was the weight for the full panel. In all our estimates we used weight2 since we used the entire panel.

## What was Estimated?

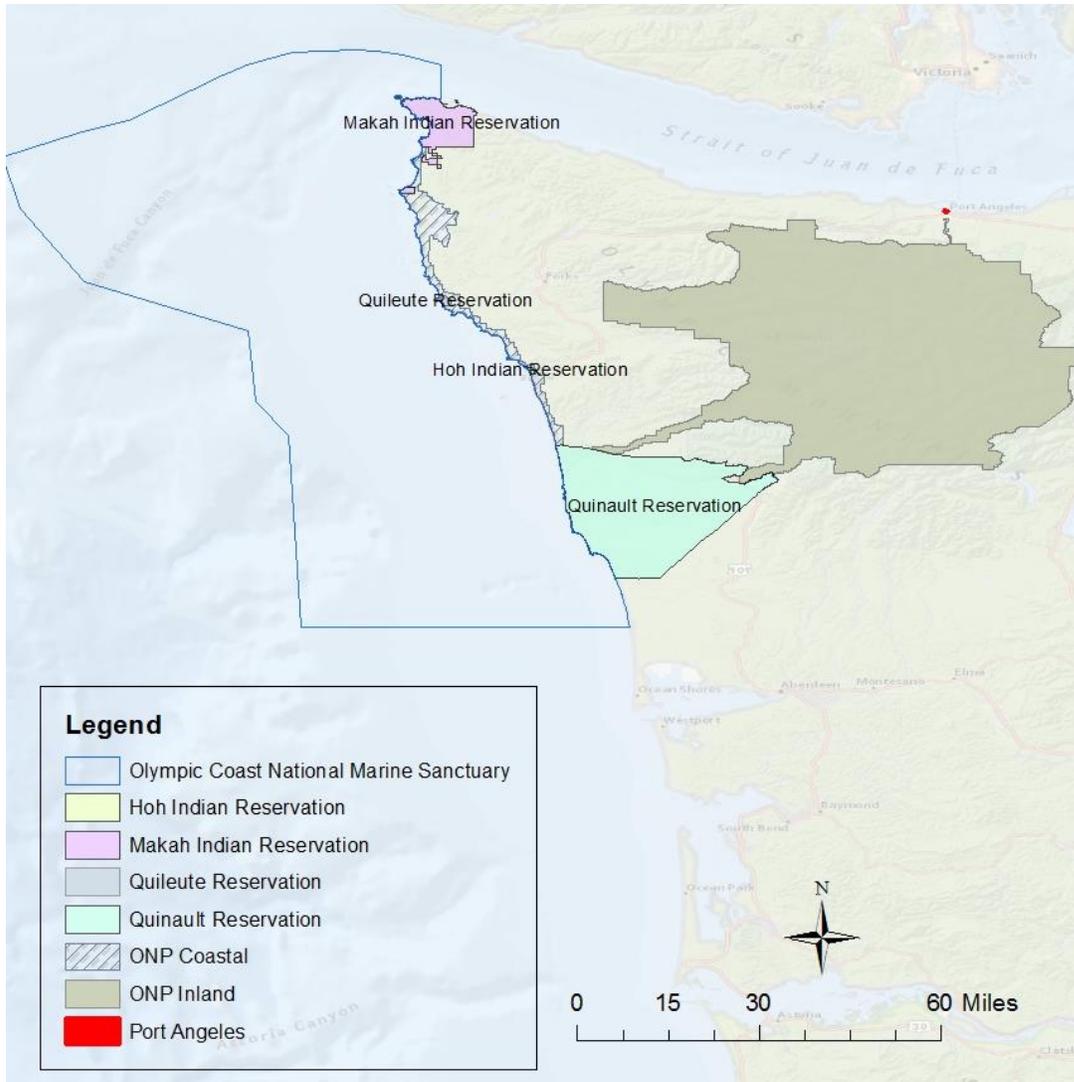
- Demographics – Who are the Users?
- Uses
  1. Percent of Washington households that visited the Outer Coast in the past 12 months.
  2. Number of recreation trips per household to the Outer Coast in the past 12 months.
  3. Number of people on last trip per household to the Outer Coast for recreation.
  4. Recreation activity participation rates (percent of households) by activity type in the Outer Coast during the past 12 months.
  5. Recreation activity participation rates (percent of households) by activity type in the Outer Coast on the last trip.
  6. Person-trips and person-days to Outer Coast for recreation past 12 months.
  7. Person-trips and person-days by recreation activity/activity group type past 12 months.
  8. Spatial distribution of uses by activity type (person-trips and person-days).
- Expenditures by Category of Expenditure
  1. Per household group per trip (last trip).
  2. Per person-trip (last trip).
  3. Per person-day (last trip and annual average)
  4. Total Annual Expenditures
- Economic Impact/contribution to Local Area Economies

1. Output
  2. Value added
  3. Income
  4. Employment (full and part-time jobs)
- Importance-Satisfaction Ratings for 25 Natural Resource Attributes, Facilities, & Services

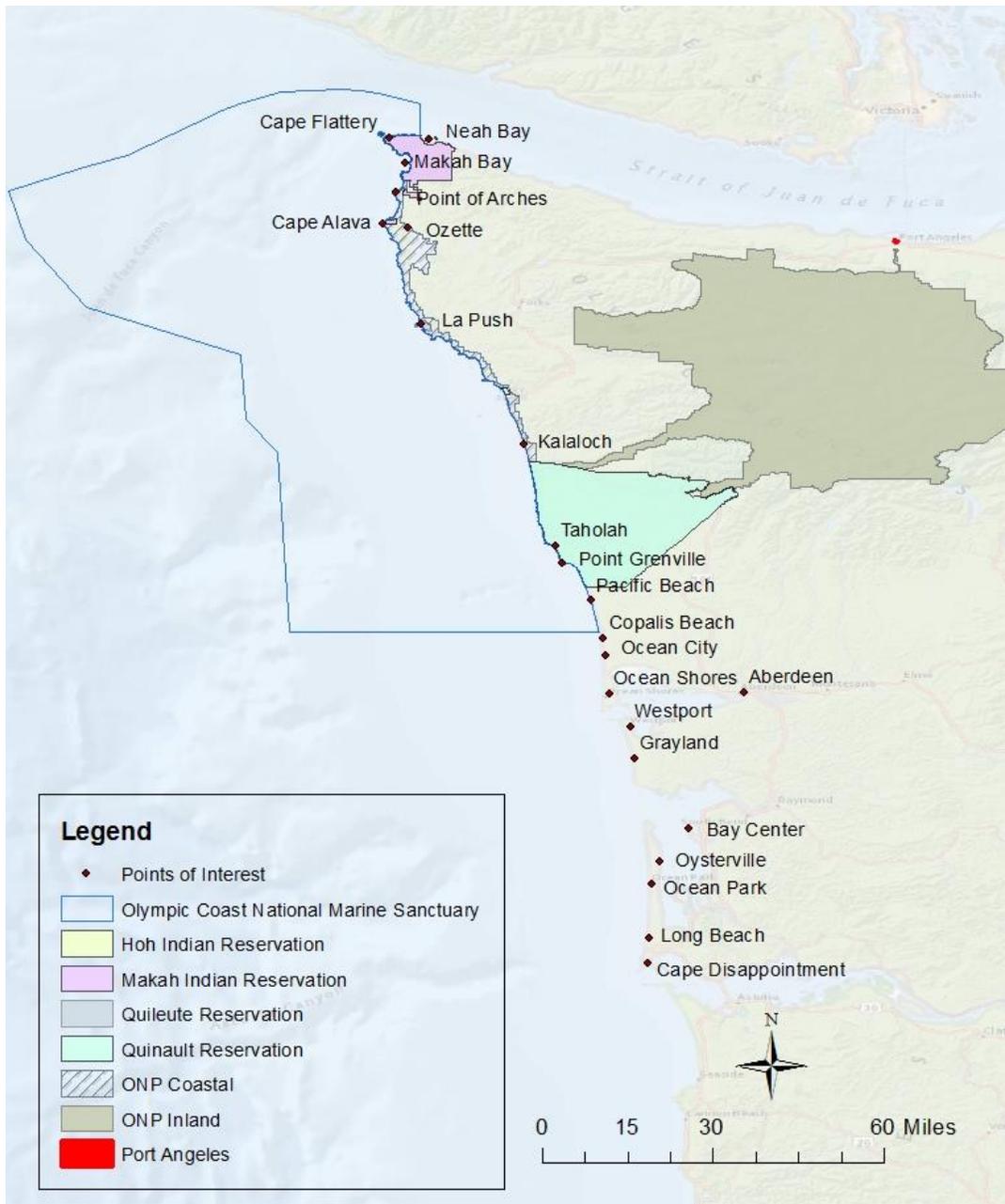
***Jurisdictions/Sub-areas for Estimation.*** For each of the measures above, we made estimates for the following different management jurisdictions or sub-areas. For comparative demographic profiles, statistical test were done for pairwise comparisons between different jurisdiction/sub-areas. Details on methods of estimation can be found in Leeworthy et al (2015a). The Outer Coast is always included in each comparative analysis (i.e., OCNMS-2 km compared to the Outer Coast).

1. Outer Coast (entire study area), OCNMS-Legal Definition (actual legal boundaries), OCNMS – 2 km buffer (2 kilometers inland from legal boundary), and Port Angeles (area near the shoreline where the OCNMS Headquarters and Visitor Center and the Fiero Life Center and possible site for a new visitor Center).

The survey was not originally designed to estimate by jurisdiction/sub-areas, except for the Outer Coast and OCNMS. We were able to make estimates for the OCNMS jurisdiction/sub-areas. Figure 1.1 shows the areas for each jurisdiction/sub-area. Figure 1.2 shows points of interest along the Outer Coast of Washington.



**Figure 1.1 Map of the Jurisdictions/sub-areas for the Outer Coast of Washington**



**Figure 1.2 Map of Points of Interest for the Outer Coast of Washington**

### **Sample Sizes for Estimation**

An important limitation of the data was that mapped data and expenditures were only obtained for the last trip. Thus spatial distributions for the last trip are used to distribute the annual person-days by activity/activity group required the assumption that the last trip was representative of all annual trips. The same is true for expenditures.

The spatial distribution of trips on the last trip was also used to derive the proportion of use in each of the jurisdictions/sub-areas. Not all survey respondents completed the

mapping exercise. About 48% (2,672/5,538) of all survey respondents completed the mapping exercise, so this further limited available sample sizes for identifying where they did their activities.

Table 1.1 shows the sample sizes available to estimate different project measures by jurisdiction/sub-area. Adequate sample sizes were available for most objectives.

For expenditures, the samples were relatively weak, but developed acceptable estimates for Port Angeles.

For importance-Satisfaction Ratings, sample sizes were inadequate to support estimation for Port Angeles (N=14 – 15). The reason small sample size for importance-satisfaction ratings were obtained is because this question set was included only in wave 2 of the survey. The lower numbers in Table 1.1 for importance-satisfaction ratings were for items that many people did not think were relevant to them (e.g., handicap facilities).

**Table 1.1 Sample Sizes for Estimation**

Jurisdiction/sub-area	Demographics, Uses, Expenditures	% of Sample <sup>1</sup>	Importance- Satisfaction Ratings <sup>2</sup>	Mapped Data Points	% of Sample <sup>1</sup>
1. Outer Coast (entire study area)	2,378	100.00	645 - 1,011	10,980	100.00
2. OCNMS - Legal Definition	112	4.71	30 - 60	554	5.05
3. OCNMS - 2 km buffer	364	15.31	89 - 162	1,756	15.99
4. Port Angeles	31	1.30	14 - 15	125	1.14

1. Unweighted sample percent.

2. Range of number of sample for the 25 items rated.

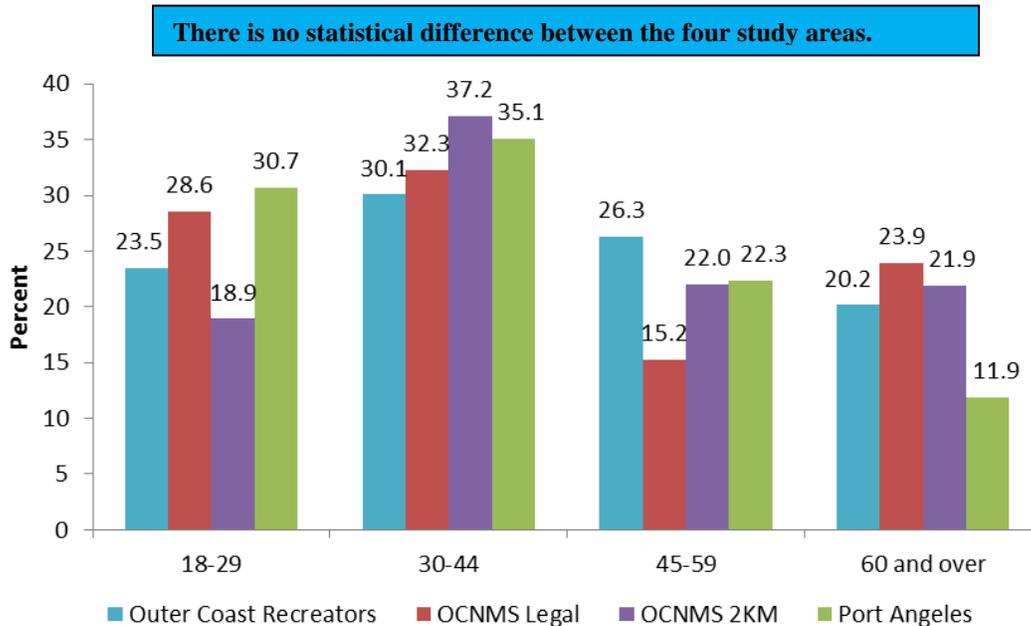
## 2. Comparative Profile of Recreators of the Outer Coast of Washington and OCNMS

### Introduction

This chapter presents the findings for the Outer Coast of Washington, OCNMS-Legal, OCNMS-2 km, and Port Angeles. Demographic profiles of users, the intensity and type of use, and expenditure profiles by region are presented below.

### Demographic Profiles

**Age.** Recreators in the OCNMS with the 2km buffer area are, on average, slightly older than the recreators in the other three study areas, but this difference is not statistically significant. Overall, the highest proportion of users in all the four areas is in the age category of 33-44 (Figure 2.1)

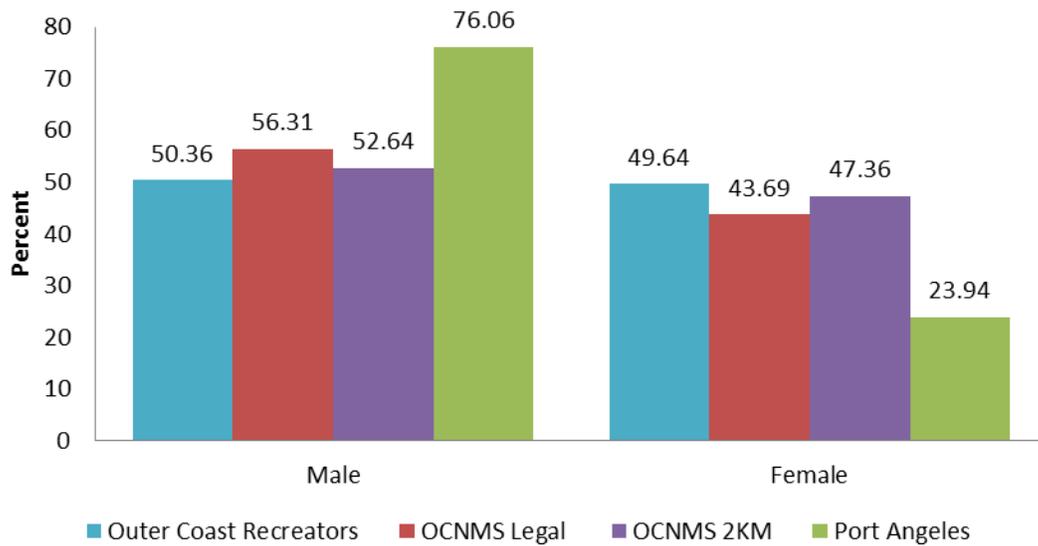


Age	Outer Coast	OCNMS Legal	OCNMS 2KM	Port Angeles
Minimum	18	19	18	19
Maximum	88	79	79	72
Mean	43.74	42.80	44.96	38.11
Median	43	38	44	36
Mode	36	31	44	26

**Figure 2.1 Age Distribution in the Outer Coast, OCNMS Legal, OCNMS 2km & Port Angeles**

**Gender.** There were two statistically significant differences. There was a difference between all recreating visitors to the Outer Coast and Port Angeles and between the OCNMS-2 km and Port Angeles. A higher proportion of recreating visitors to Port Angeles were male (76.06%) versus 50.36% for all recreating visitors to the entire Outer Coast. A higher proportion of recreating visitors to Port Angeles were male (76.06%) versus 52.64% for the OCNMS-2 km jurisdiction/sub-area (Figure 2.2).

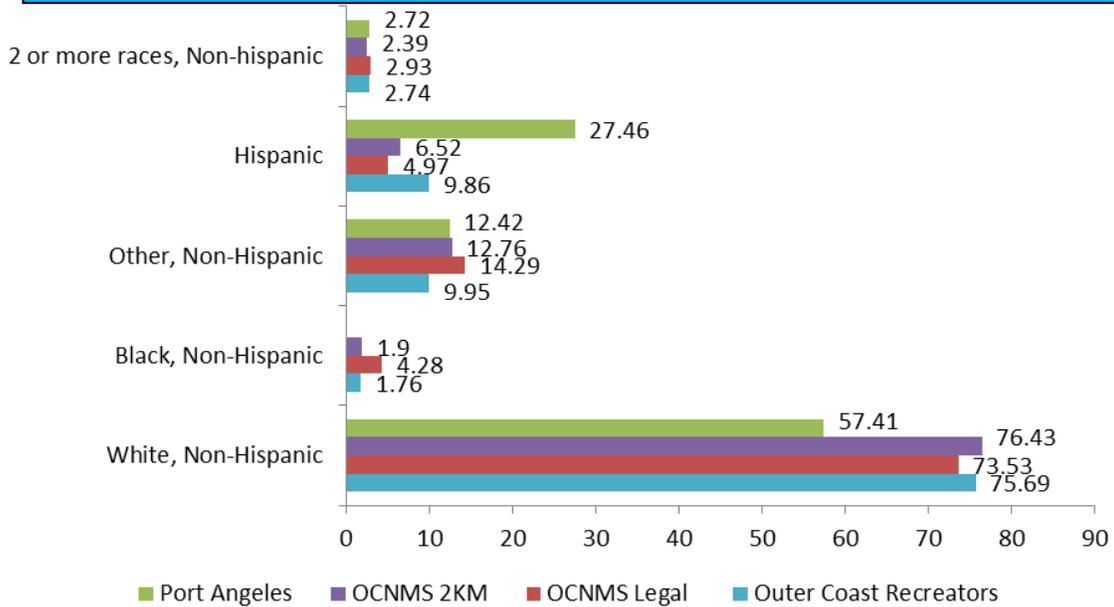
There were two statistically significant differences. There was a difference between all recreating visitors to the Outer Coast and Port Angeles and between the OCNMS-2 km and Port Angeles.



**Figure 2.2 Gender Distribution in the Outer Coast, OCNMS Legal, OCNMS 2km & Port Angeles**

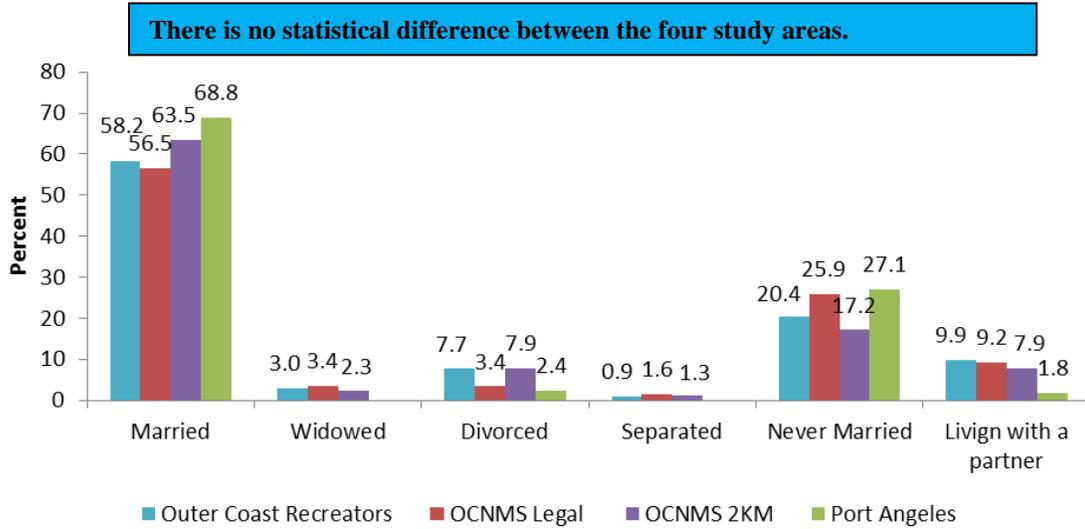
**Race and Ethnicity.** There are two statistically significant differences between jurisdiction/sub-areas. There are differences between OCNMS-Legal and Port Angeles and between OCNMS-2 km and Port Angeles. A higher proportion of recreating visitors to the OCNMS-Legal jurisdiction/sub-area were White, Non-Hispanic (73.53%) versus those who visited Port Angeles (57.41%). A higher proportion of Port Angeles recreating visitors were Hispanic (27.46%) versus 4.97% of recreating visitors to the OCNMS-Legal jurisdiction/sub-area. A higher proportion of recreating visitors to the OCNMS-2 km jurisdiction/sub-area were White, Non-Hispanic (76.43%) versus those who visited Port Angeles (57.41%). A higher proportion of Port Angeles recreating visitors were Hispanic (27.46%) versus 6.52% of recreating visitors to the OCNMS-2 km jurisdiction/sub-area (Figure 2.3).

There are two statistically significant differences between jurisdiction/sub-areas. There are differences between OCNMS-Legal and Port Angeles and between OCNMS-2 km and Port Angeles.



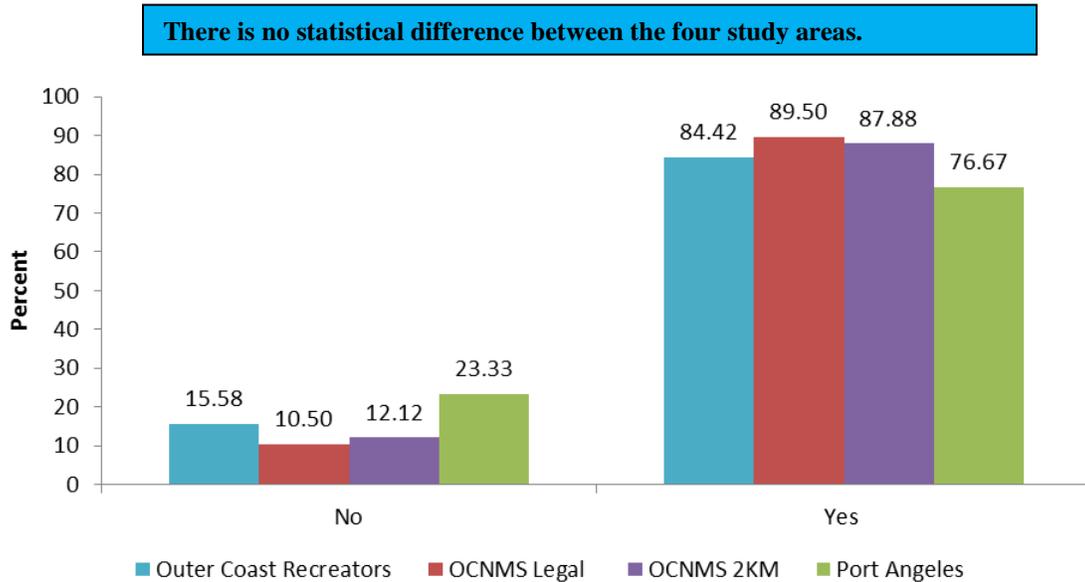
**Figure 2.3 Race and Ethnicity Distribution in the Outer Coast, OCNMS Legal, OCNMS 2km & Port Angeles**

**Marital Status.** A higher proportion of the recreators in all four study areas are married. Even though the percentage of married recreators is higher in Port Angeles, the difference is not statically significant between this subgroup and the recreators in the other jurisdictions (Figure 2.4).



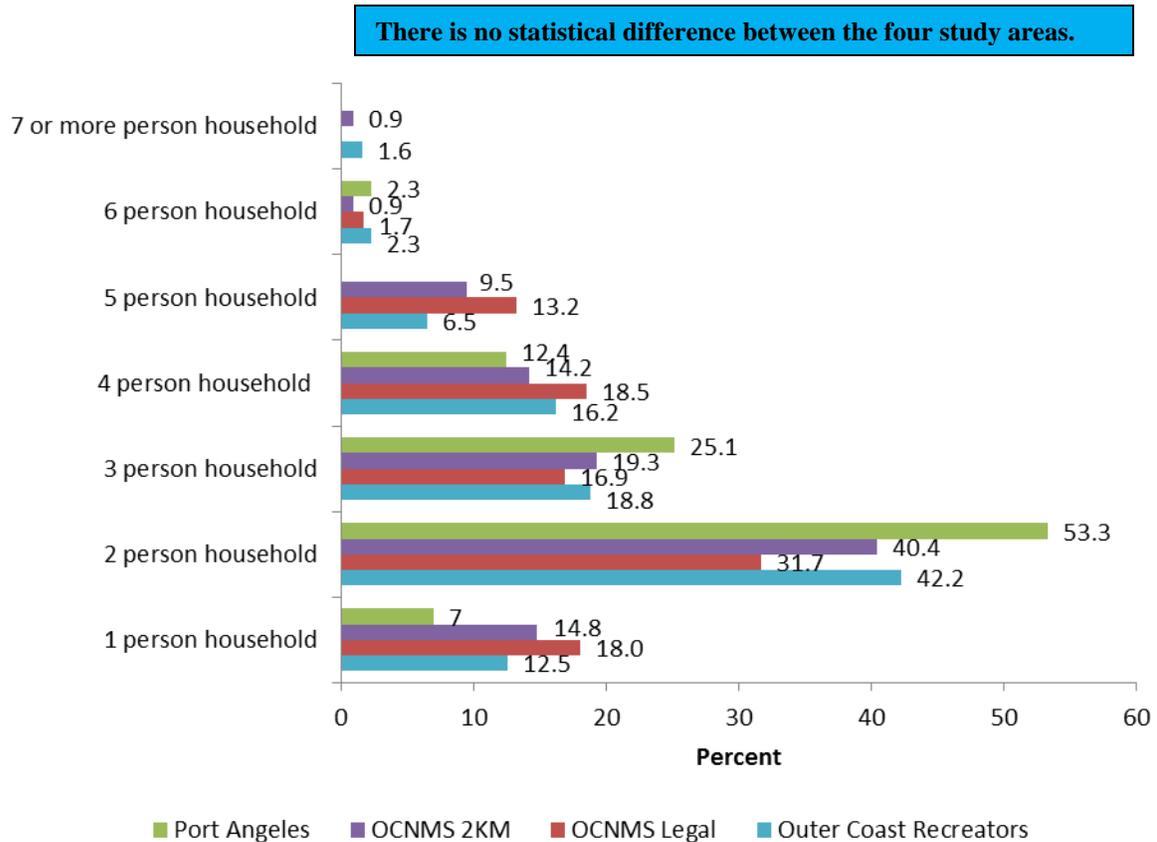
**Figure 2.4 Marital Status Distribution in the Outer Coast, OCNMS Legal, OCNMS 2km & Port Angeles**

**Head of Household.** The majority of the recreators in all fours study areas were heads of household, but there is no significant difference between these areas (Figure 2.5)



**Figure 2.5 Head of Household Distribution in the 4 Study Areas**

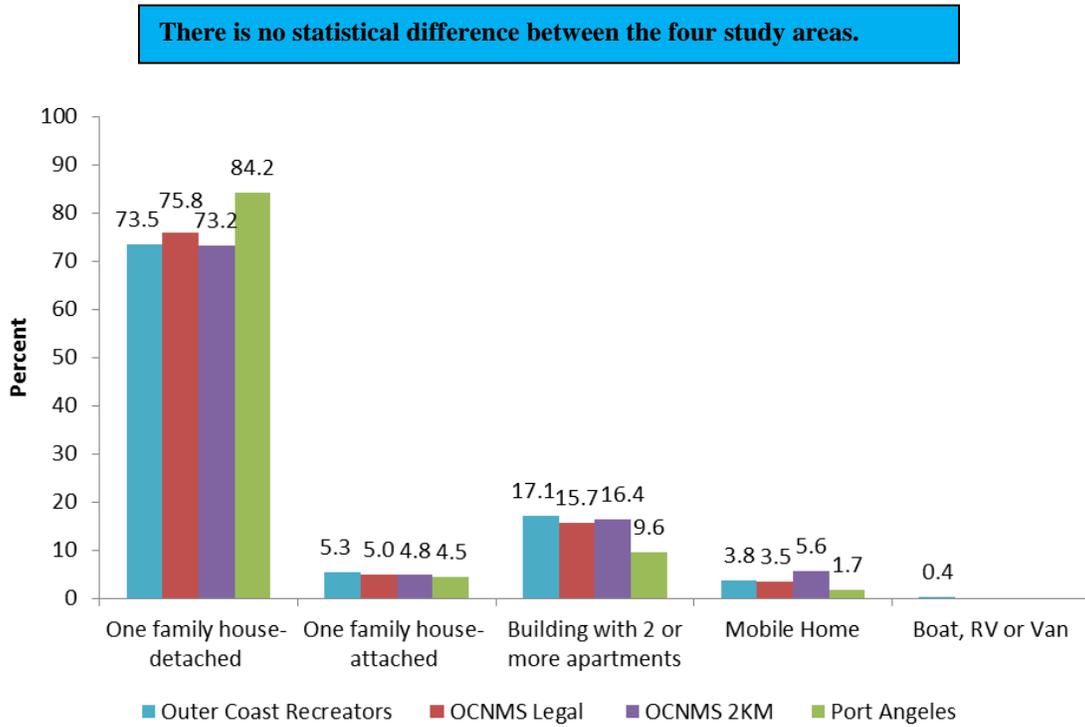
**Household Size.** A higher proportion of the recreators in the Outer Coast of Washington, OCNMS legal boundaries, OCNMS with a 2km buffer area, and Port Angeles come from a two-person household. Even though the percentage of recreators from a two-person household is greater in Port Angeles, the differences between this area and the other three study areas is not statistically significant (Figure 2.6)



Household size	Outer Coast	OCNMS Legal	OCNSM 2KM	Port Angeles
Minimum	1	1	1	1
Maximum	15	6	14	6
Mean	2.77	2.82	2.74	2.52
Median	2	3	2	2
Mode	2	2	2	2

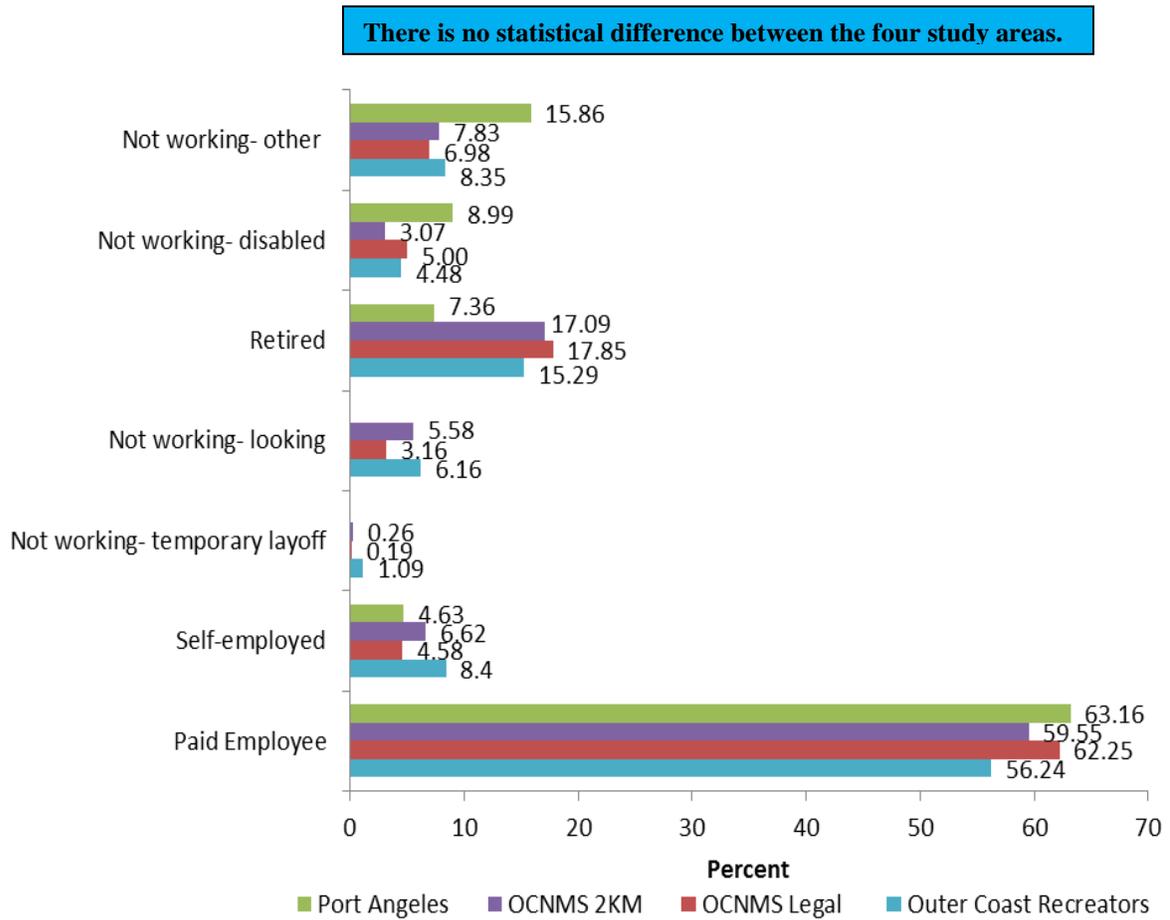
**Figure 2.6. Household Size Distribution in the Outer Coast, OCNMS Legal, OCNMS 2km & Port Angeles**

**Housing Type.** The majority of the recreators in the Outer Coast of Washington, OCNMS’s legal boundary, OCNMS with the 2km buffer area, and Port Angeles live in a one family house-detached and there is no significant difference between the four areas (Figure 2.7).



**Figure 2.7. Housing Type Distribution in the Outer Coast, OCNMS Legal, OCNMS 2km & Port Angeles**

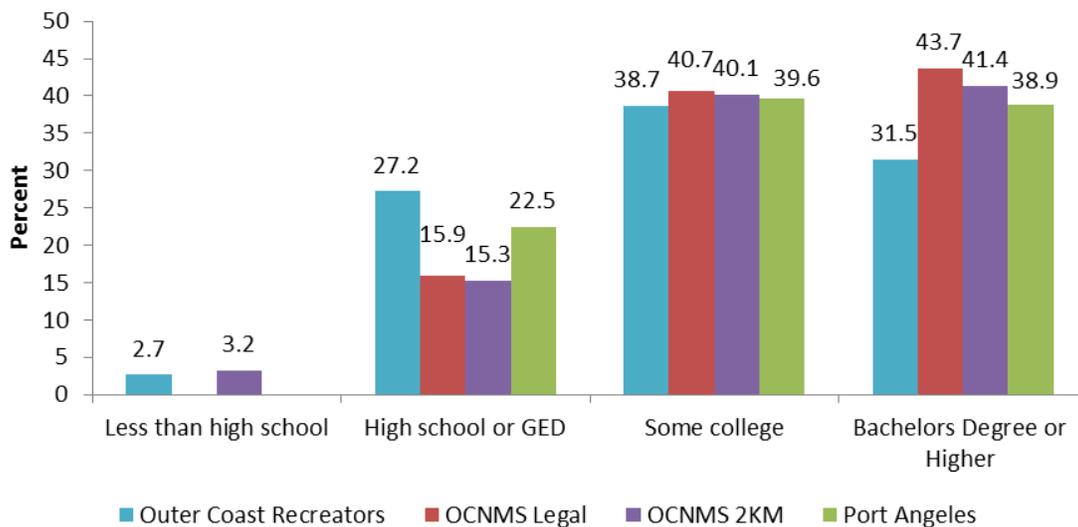
**Current Employment Status.** A higher proportion of the recreators in the Outer Coast of Washington, OCNMS’s legal boundary, OCNMS with the 2km buffer area, and Port Angeles have an employment status of paid employees and the differences between the four areas is not statistically significant (Figure 2.8).



**Figure 2.8. Current Employment Distribution in the Outer Coast, OCNMS Legal, OCNMS 2km & Port Angeles**

**Education Level.** There are two statistically significant differences between jurisdiction/sub-areas. There is a difference between the Outer Coast and the OCNMS-Legal and between the Outer Coast and the OCNMS-2 km. Recreating visitors to the OCNMS-Legal jurisdiction/sub-area were more highly educated than those recreating visitors to the entire Outer Coast. 43.66% of OCNMS-Legal jurisdiction/sub-area recreating visitors had a Bachelor’s Degree or Higher versus 31.45% for all recreating visitors to the Outer Coast. 15.87% of recreating visitors to the OCNMS-Legal jurisdiction/sub-area had a High School or less education, while 29.89% of all recreating visitors to the Outer Coast had a High School or less education. Recreating visitors to the OCNMS-2 km jurisdiction/sub-area were more highly educated than those recreating visitors to the entire Outer Coast. 41.44% of OCNMS-2 km jurisdiction/sub-area recreating visitors had a Bachelor’s Degree or Higher versus 31.45% for all recreating visitors to the Outer Coast. 18.45% of recreating visitors to the OCNMS-2 km jurisdiction/sub-area had a High School or less education, while 29.89% of all recreating visitors to the Outer Coast had a High School or less education (Figure 2.9).

There are two statistically significant differences between jurisdiction/sub-areas. There is a difference between the Outer Coast and the OCNMS-Legal and between the Outer Coast and the OCNMS-2 km. .



**Figure 2.9. Education Level Distribution in the Outer Coast, OCNMS Legal, OCNMS 2km & Port Angeles**

**Household Income.** There are two statistically significant differences between jurisdiction/sub-areas. There is a difference between the Outer Coast and Port Angeles and between the OCNMS-2 km and Port Angeles. Recreating visitors to the Port Angeles jurisdiction/sub-area had higher household incomes than all recreating visitors to the Outer Coast. 63.09% of recreating visitors to the Port Angeles jurisdiction/sub-area had household income greater than or equal to \$85,000 versus 40.54% for all recreating visitors to the Outer Coast. Recreating visitors to the Port Angeles jurisdiction/sub-area had higher household incomes than all recreating visitors to the Outer Coast. 63.09% of recreating visitors to the Port Angeles jurisdiction/sub-area had household income greater than or equal to \$85,000 versus 44.82% for all recreating visitors to the OCNMS-2 km jurisdiction/sub-area (Table 2.1).

**Table 2.1 Household Income Distribution in the Outer Coast, OCNMS Legal, OCNMS 2km & Port Angeles**

Household Income	Outer Coast Recreators (%)	OCNMS Legal (%)	OCNMS 2KM (%)	Port Angeles (%)
Less than \$5,000	1.40	0.19	0.76	0.85
\$5,000-\$7,499	0.63	-	0.69	0.77
\$7,500-\$9,999	0.92	-	0.73	-
\$10,00-\$12,499	1.12	0.58	0.28	8.22
\$12,500-\$14,999	1.43	0.94	1.35	-
\$15,000-\$19,999	1.72	4.53	2.34	-
\$20,000-\$24,999	1.67	0.15	0.37	-
\$25,000-\$29,999	3.31	0.42	1.34	-
\$30,000-\$34,999	3.08	1.68	2.08	3.71
\$35,000-\$39,999	5.43	4.45	3.52	-
\$40,000-\$49,999	7.14	3.45	7.34	-
\$50,000-\$59,999	10.24	8.96	13.16	9.59
\$60,000-\$74,999	11.60	12.29	14.46	13.77
\$75,000-\$84,999	9.74	5.92	6.73	-
\$85,000-\$99,999	12.28	14.78	10.81	28.58
\$100,000-\$124,999	14.72	16.96	16.41	6.36
\$125,000-\$149,999	5.80	9.80	7.15	4.45
\$150,000-\$174,999	3.64	7.91	4.81	3.44
\$175,000 or more	4.10	6.99	5.64	20.26

*Place of Residence*

**Top Five Zip Code.** Table 2.2 shows the top five zip codes where Outer Coast of Washington, OCNMS legal definition, OCNMS with a 2km buffer and Port Angeles recreators reside.

**Table 2.2. Top Five Zip Codes in the Outer Coast, OCNMS Legal, OCNMS 2km & Port Angeles**

Study Area/Rank	Zip Code	Percentage
<b>Outer Coast Recreators</b>		
1	98632	2.00%
2	98012	1.34%
3	98532	1.30%
4	98382	1.27%
5	98391	1.15%
<b>OCNMS Legal</b>		
1	98058	7.37%
2	98444	5.92%
3	99001	5.64%
4	98505	5.50%
5	99337	2.98%
<b>OCNMS 2KM</b>		
1	98110	2.78%
2	98208	2.62%
3	98058	2.43%
4	98331	2.18%
5	98444	2.17%
<b>Port Angeles</b>		
1	98053	15.66%
2	98513	12.50%
3	98498	9.12%
4	99207	8.22%
5	99208	7.06%

**Top Five Counties.** The counties of King, Pierce, and Thurston are part of the top five counties that recreators reside in for all four of the study areas. Snohomish County is part of the top five list for the areas of Outer Coast of Washington, OCNMS with the 2km buffer area, and Port Angeles. King County, Pierce County, Snohomish, County, and Thurston County are all part of the top five list for both the Outer Coast recreators and the OCNMS with a 2km buffer area recreators, and the differences between these two areas are statistically significant (Table 2.3).

**Table 2.3. Top Five Counties in the Outer Coast, OCNMS Legal, OCNMS 2km & Port Angeles**

Study Area/Rank	County	Percentage
<b>Outer Coast Recreators</b>		
1	King	29.46%
2	Pierce	12.79%
3	Snohomish	9.78%
4	Clark	7.72%
5	Thurston	5.29%
<b>OCNMS Legal</b>		
1	King	39.11%
2	Pierce	11.37%
3	Thurston	10.65%
4	Spokane	6.97%
5	Island	4.06%
<b>OCNMS 2KM</b>		
1	King	31.76%
2	Pierce	11.54%
3	Snohomish	11.30%
4	Kitsap	8.00%
5	Thurston	7.38%
<b>Port Angeles</b>		
1	King	36.21%
2	Spokane	17.45%
3	Thurston	14.97%
4	Pierce	12.34%
5	Snohomish	8.33%

## Uses

The next section presents information on the average number of annual trips made by Washington households, the length of the trips measured in average days per trip, and the average annual number of person-trips made to the each jurisdiction/sub-area on the Outer Coast. These estimates were used in deriving the total annual person-trips and person-days in each jurisdiction/sub-area (see Leeworthy et al 2016a). Also, presented in this section are the types of activities completed in each study area. Information is presented in percentages of total activities, person-days, and person-trips within an area. Activities were sorted into four main activity groups: shore-based, water-based sports, wildlife and site-seeing, and other. The activities included in these four categories are provided in Table 2.4.

***Average Annual Trips.*** On average, Washington households that visited the Outer Coast for recreation made 1.76 trips per year. There was no significant difference between those who visited the Outer Coast and those who visited the OCNMS-Legal and OCNMS-2 km jurisdiction sub-areas (1.78 and 1.77 respectively), but those who visited the Port Angeles jurisdiction/sub-area took significantly less trips (1.32) see Figure 2.10.

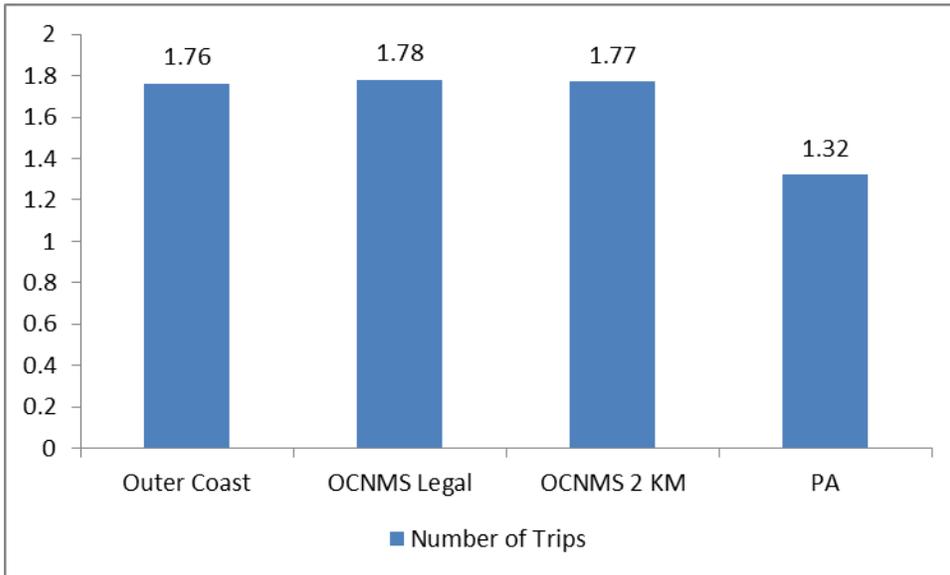
***Average Number of Days Per Trip.*** On average, Washington households that visited the Outer Coast for recreation undertook 2.76 days per trip. There were differences by jurisdiction/sub-areas but they were not statistically significant (Figure 2.11).

***Average Number of Person-trips Per Household.*** Annual number of person-trips per household is equal to the number of annual trips per household times the number in the household that went on the trips. On average, Washington households that visited the Outer Coast made 4.88 person-trips per year. There was no statistically significant differences between the Outer Coast and the OCNMS-Legal and OCNMS-2 km jurisdiction/sub-areas (4.86 and 4.90 respectively), but the visitors to Port Angeles too significantly less person-trips (3.37) see Figure 2.12).

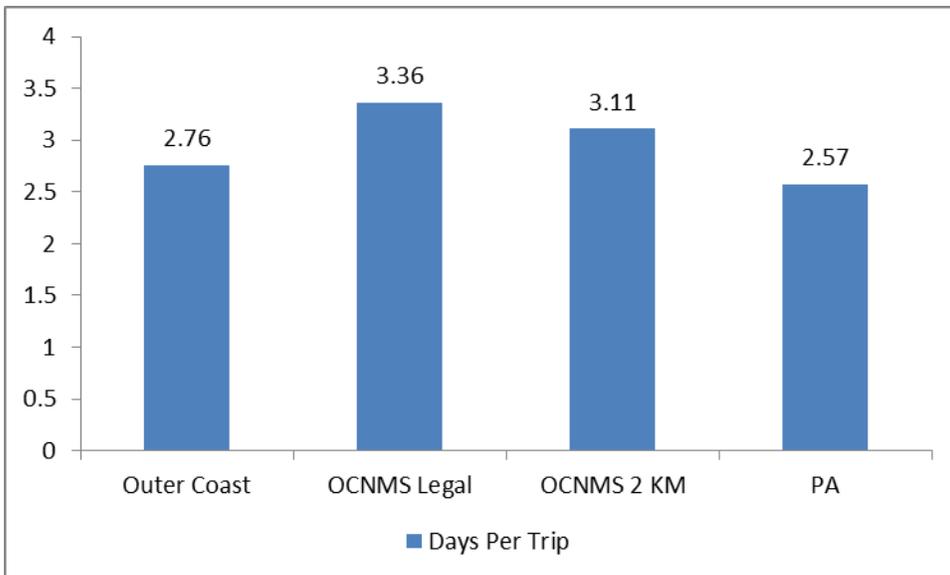
***Activity Participation Rates by Jurisdiction/Sub-area.*** Table 2.4 shows the activity participation rate or the percent of Washington households that visited the Outer Coast that did each activity over the past 12 months. Shore-based activities are the most commonly engaged in activities by visitors regardless of study area. In the entire Outer Coast, the participation rate for a shore-based activity is 91%. Across the sub-regions analyzed in this section, there are variations in the percentage of participation for water-based sports. For the Outer Coast, there is a 36% participation rate in water-based activities. In Port Angeles, the participation rate for water-based activities is 53%.

Table 2.5 presents the percentages based on only the respondents' last trips. On the respondents' last trips to the Outer Coast, 88% engaged in a shore-based activity and 27% enjoyed a water-based activity.

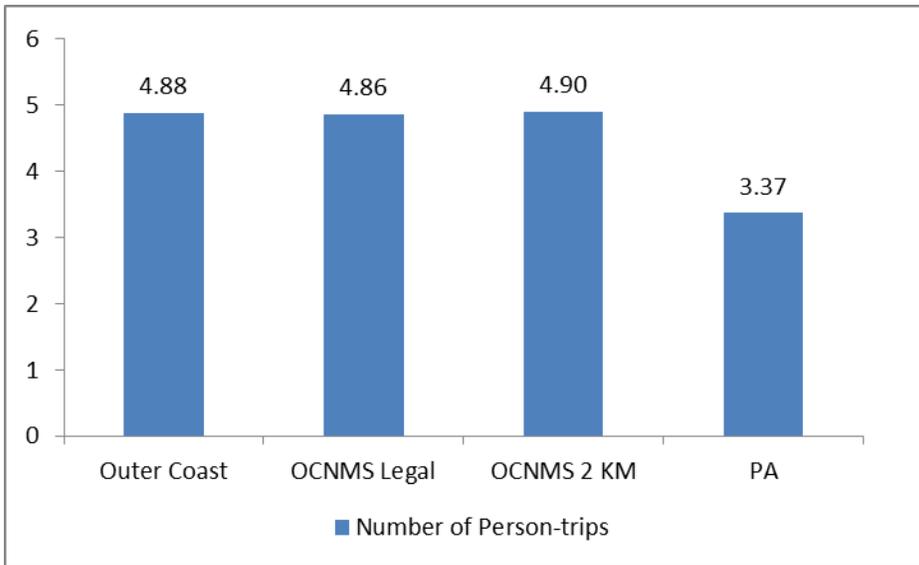
**Person-trips and Person-days by Activity.** Tables 2.6 and 2.7 present person-trips by area and person-days by area. There are roughly 145 thousand person-trips to the OCNMS legal boundary and 470 thousand when expanding the sanctuary to include a 2km buffer. In regards to person-days, there are approximately 365 thousand person-days of shore-based activities within the legal definition of the sanctuary and over 1 million person-days when expanding the sanctuary to include a 2km buffer.



**Figure 2.10 Average Annual Number of Trips to Area**



**Figure 2.11 Average Number of Days Per Trip**



**Figure 2.12 Number of Person-trips Per Household**

**Table 2.4 Activity Participation Past 12 months by Area (Percent)**

Activity Group/Activity	Outer Coast of WA	OCNMS Legal	OCNMS 2 km Buffer	Port Angeles
<b>Shore-based Activities</b>	<b>90.92</b>	<b>91.08</b>	<b>94.17</b>	<b>82.14</b>
Beach going	69.46	69.03	72.48	58.27
Beach Driving	23.90	28.10	21.35	18.19
Hiking/Biking	33.98	30.05	40.01	27.23
Horseback Riding	4.53	5.68	3.51	4.03
Camping	27.81	28.09	32.33	9.41
Photography	35.90	30.22	32.55	43.56
Collecting Non-living Resources	27.81	31.37	27.80	11.65
Tide Pooling	20.17	30.58	26.46	11.43
Hang gliding/Parasailing	0.41	1.23	0.49	0.00
<b>Water-based Sports</b>	<b>36.52</b>	<b>48.04</b>	<b>35.70</b>	<b>53.31</b>
Fishing from Shore	8.89	10.15	9.70	7.06
Fishing from a Private Boat	4.40	2.58	6.61	0.00
Fishing from a Charter Boat	4.06	1.58	2.23	11.60
Collecting/Harvesting Live Resources	12.30	28.71	13.09	9.17
Skim Boarding	1.19	1.56	2.04	0.00
Surfing	1.64	2.19	1.23	11.60
Swimming or Body Surfing	12.43	17.71	12.18	5.62
Windsurfing	0.85	4.78	1.97	13.34
Snorkeling from Shore	2.03	7.00	2.61	1.74
Snorkeling from a Private Boat	1.32	0.58	0.24	0.00
Snorkeling from a Charter Boat	0.59	4.78	2.06	0.00
Personal Watercraft	0.68	2.96	0.92	0.00
Kayaking	5.63	11.72	6.33	2.29
Boating/Sailing	6.92	5.58	6.70	20.89
SCUBA from Shore	1.27	5.36	1.66	1.74
SCUBA from a Private Boat	0.76	1.14	1.41	0.00
SCUBA from a Charter Boat	0.60	5.19	1.60	0.00
<b>Wildlife &amp; Sightseeing</b>	<b>74.67</b>	<b>74.94</b>	<b>77.35</b>	<b>76.35</b>
Scenic enjoyment/Sightseeing	63.49	64.46	65.71	61.56
Sitting in the car watching the scene	26.94	26.38	26.96	42.44
Watching Wildlife from Shore	40.07	35.21	40.57	58.01
Watching Wildlife from a Private Boat	4.15	8.99	7.61	1.02
Watching Wildlife from a Charter Boat	3.58	1.98	2.94	16.56
<b>Other</b>	<b>0.07</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**Table 2.5 Activity Participation Last Trip by Area (Percent)**

Activity Group/Activity	Outer Coast of WA	OCNMS Legal	OCNMS 2 km Buffer	Port Angeles
<b>Shore-based Activities</b>	<b>88.19</b>	<b>88.57</b>	<b>92.37</b>	<b>87.71</b>
Beach going	62.03	61.29	70.54	42.77
Beach Driving	21.82	30.15	21.13	31.52
Hiking/Biking	28.59	24.65	37.78	23.81
Horseback Riding	2.88	2.00	1.68	1.74
Camping	20.99	19.48	25.21	3.28
Photography	34.06	27.30	31.79	46.24
Collecting Non-living resources	23.02	34.19	27.18	17.76
Tide Pooling	14.70	27.30	18.37	11.43
Hang gliding/Parasailing	0.34	0.00	0.10	0.00
<b>Water-based Sports</b>	<b>27.36</b>	<b>34.84</b>	<b>26.34</b>	<b>49.91</b>
Fishing from Shore	5.32	5.57	6.55	7.06
Fishing from a Private Boat	2.77	1.46	3.92	0.00
Fishing from a Charter Boat	3.20	6.09	3.25	11.60
Collecting/Harvesting Live resources	7.47	11.93	8.20	10.82
Skim Boarding	0.83	0.47	0.48	1.74
Surfing	1.15	7.06	2.82	0.00
Swimming or Body Surfing	7.82	7.69	5.54	2.31
Windsurfing	0.22	0.00	0.00	0.00
Snorkeling from Shore	1.01	6.96	3.50	0.00
Snorkeling from a Private Boat	1.68	6.24	0.13	0.00
Snorkeling from a Charter Boat	0.62	0.40	0.30	0.00
Personal Watercraft	0.17	0.00	2.18	0.00
Kayaking	2.80	7.55	3.99	0.00
Boating/Sailing	3.66	8.37	6.42	18.13
SCUBA from Shore	0.52	0.00	0.09	0.00
SCUBA from a Private Boat	0.67	4.71	1.47	0.00
SCUBA from a Charter Boat	0.47	4.71	1.85	0.00
<b>Wildlife &amp; Sightseeing</b>	<b>70.07</b>	<b>77.32</b>	<b>75.15</b>	<b>75.35</b>
Scenic enjoyment/Sightseeing	57.66	62.78	62.14	56.08
Sitting in the car watching the scene	25.14	22.85	24.42	44.83
Watching Wildlife from Shore	35.02	35.72	38.27	28.06
Watching Wildlife from a Private Boat	2.65	2.19	4.21	12.99
Watching Wildlife from a Charter Boat	2.10	1.84	2.21	0.00
<b>Other</b>	<b>0.05</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**Table 2.6 Person-trips by Area**

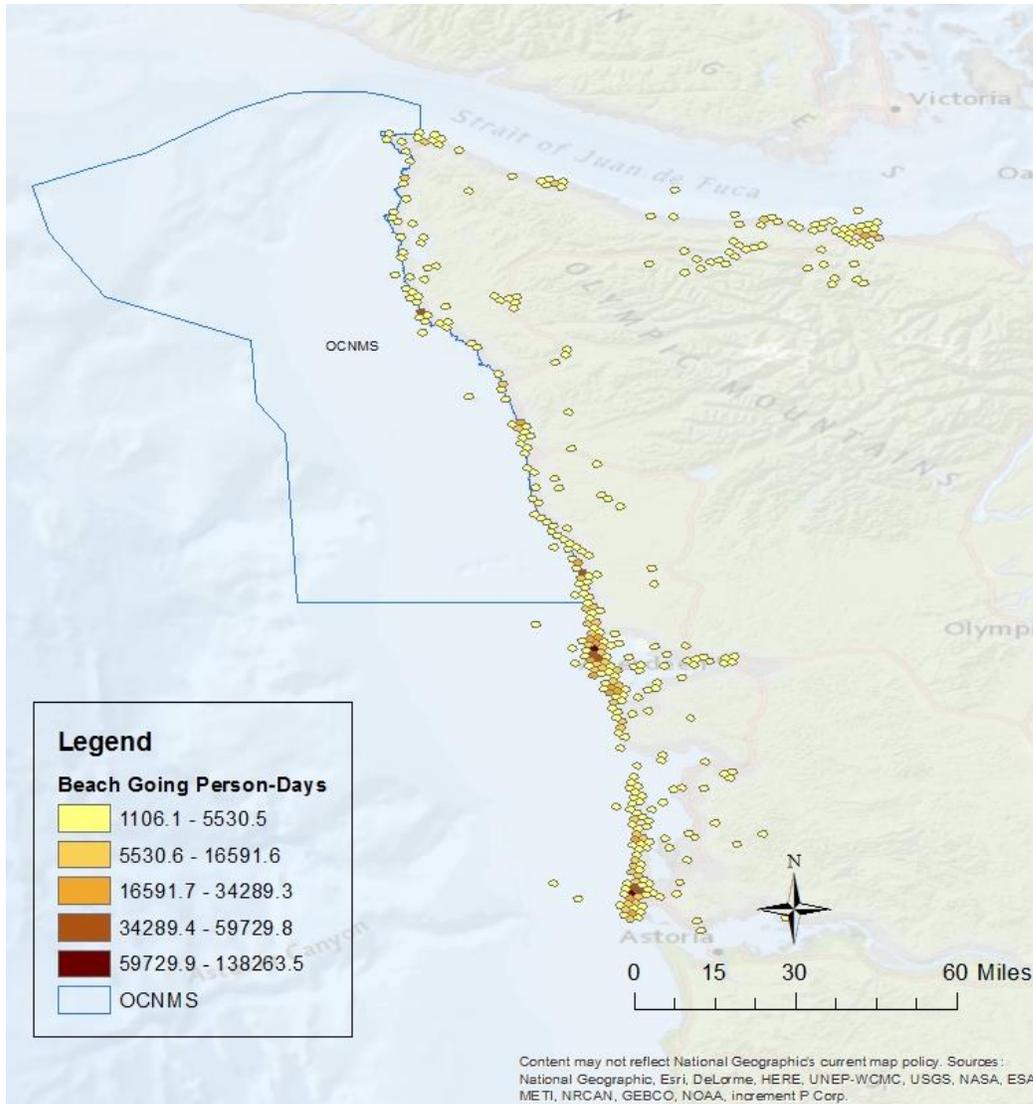
Activity Group/Activity	Outer Coast of WA	OCNMS Legal	OCNMS 2 km Buffer	Port Angeles
<b>Shore-based Activities</b>	<b>2,758,934</b>	<b>144,682</b>	<b>470,098</b>	<b>27,988</b>
Beach going	737,541	36,526	122,387	9,013
Beach Driving	283,999	11,385	35,578	1,423
Hiking/Biking	394,293	19,449	77,796	5,218
Horseback Riding	51,622	3,321	6,641	949
Camping	368,741	18,026	56,924	2,372
Photography	364,053	18,026	59,770	5,692
Collecting Non-living resources	320,601	18,500	55,027	2,372
Tide Pooling	234,034	18,500	54,552	949
Hang gliding/Parasailing	4,050	949	1,423	0
<b>Water-based Sports</b>	<b>969,927</b>	<b>43,167</b>	<b>110,053</b>	<b>8,539</b>
Fishing from Shore	143,569	4,744	14,705	474
Fishing from a Private Boat	80,675	1,423	8,064	0
Fishing from a Charter Boat	60,777	1,423	4,269	474
Collecting/Harvesting Live resources	216,242	9,962	20,398	949
Skim Boarding	13,114	474	2,372	0
Surfing	44,174	1,897	3,321	474
Swimming or Body Surfing	204,241	8,064	22,770	1,423
Windsurfing	10,379	474	1,897	949
Snorkeling from Shore	5,228	1,423	2,372	474
Snorkeling from a Private Boat	3,988	474	949	0
Snorkeling from a Charter Boat	5,558	474	2,372	0
Personal Watercraft	22,672	1,897	1,897	0
Kayaking	71,929	4,269	11,859	474
Boating/Sailing	73,380	3,795	9,487	2,372
SCUBA from Shore	7,370	949	949	474
SCUBA from a Private Boat	5,778	474	1,423	0
SCUBA from a Charter Boat	852	949	949	0
<b>Wildlife &amp; Sightseeing</b>	<b>1,479,405</b>	<b>74,950</b>	<b>252,838</b>	<b>22,770</b>
Scenic enjoyment/Sightseeing	656,982	34,154	118,117	9,962
Sitting in the car watching the scene	286,517	12,334	41,744	4,269
Watching Wildlife from Shore	456,741	22,295	76,848	7,116
Watching Wildlife from a Private Boat	48,309	4,269	9,487	474
Watching Wildlife from a Charter Boat	30,856	1,897	6,641	949
<b>Other</b>	<b>286</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>5,208,552</b>	<b>262,799</b>	<b>832,989</b>	<b>59,296</b>

**Table 2.7 Person-days by Area**

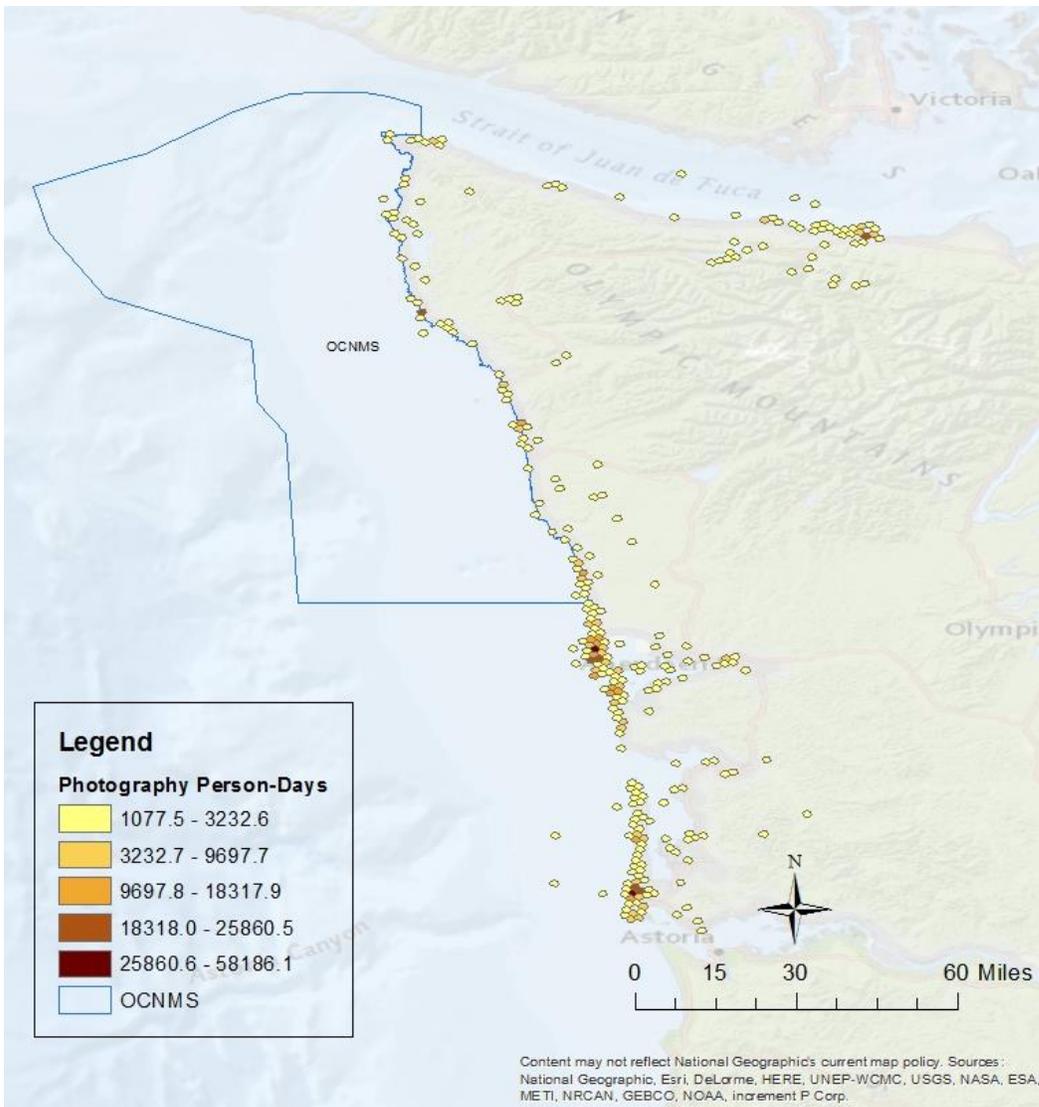
Activity Group/Activity	Outer Coast of WA	OCNMS Legal	OCNMS 2 km Buffer	Port Angeles
<b>Shore-based Activities</b>	<b>7,178,555</b>	<b>364,502</b>	<b>1,184,220</b>	<b>70,510</b>
Beach going	1,807,380	92,022	308,303	22,707
Beach Driving	746,044	28,682	89,623	3,585
Hiking/Biking	1,043,773	48,999	195,976	13,146
Horseback Riding	147,225	8,366	16,730	2,390
Camping	1,038,125	45,413	143,397	5,975
Photography	939,598	45,413	150,567	14,341
Collecting Non-living resources	820,662	46,608	138,617	5,975
Tide Pooling	630,125	46,608	137,422	2,390
Hang gliding/Parasailing	5,622	2,390	3,585	0
<b>Water-based Sports</b>	<b>2,330,559</b>	<b>108,753</b>	<b>277,234</b>	<b>21,512</b>
Fishing from Shore	391,267	11,951	37,044	1,195
Fishing from a Private Boat	166,495	3,585	20,315	0
Fishing from a Charter Boat	124,604	3,585	10,755	1,195
Collecting/Harvesting Live resources	523,487	25,097	51,384	2,390
Skim Boarding	28,426	1,195	5,975	0
Surfing	53,674	4,780	8,365	1,195
Swimming or Body Surfing	532,038	20,317	57,359	3,585
Windsurfing	32,027	1,195	4,780	2,390
Snorkeling from Shore	11,355	3,585	5,975	1,195
Snorkeling from a Private Boat	3,217	1,195	2,390	0
Snorkeling from a Charter Boat	14,994	1,195	5,975	0
Personal Watercraft	50,629	4,780	4,780	0
Kayaking	178,957	10,756	29,874	1,195
Boating/Sailing	198,348	9,561	23,899	5,975
SCUBA from Shore	11,381	2,390	2,390	1,195
SCUBA from a Private Boat	8,140	1,195	3,585	0
SCUBA from a Charter Boat	1,518	2,390	2,390	0
<b>Wildlife &amp; Sightseeing</b>	<b>3,612,386</b>	<b>188,824</b>	<b>636,921</b>	<b>57,364</b>
Scenic enjoyment/Sightseeing	1,605,723	86,046	297,549	25,097
Sitting in the car watching the scene	675,894	31,072	105,158	10,756
Watching Wildlife from Shore	1,096,910	56,169	193,586	17,926
Watching Wildlife from a Private Boat	130,301	10,756	23,899	1,195
Watching Wildlife from a Charter Boat	103,557	4,780	16,730	2,390
<b>Other</b>	<b>570</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>13,122,070</b>	<b>662,079</b>	<b>2,098,375</b>	<b>149,386</b>

## Heat Maps of Use

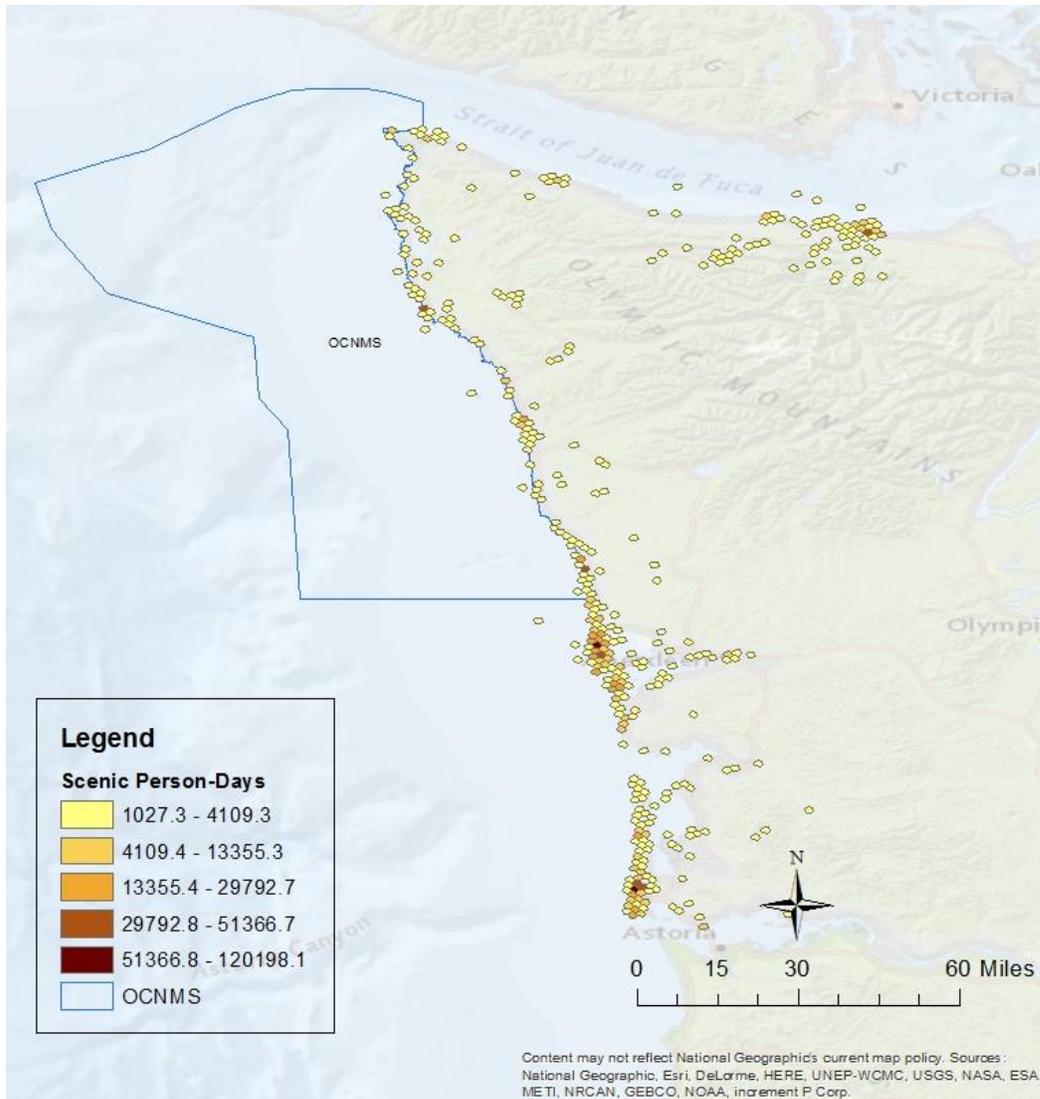
The next series of maps are shown to demonstrate the types of geospatial analyses that can be done with the data collected. The maps are hexagonal heat maps of use by beach going, photography, and scenic enjoyment person-days. If someone were to request the data, then they could develop maps for all the use categories and analyze the data for the entire Outer Coast or more refined study areas (See the Technical Appendix, Leeworthy et al. 2016a for how the maps were developed).



**Figure 2.13 Hexagon Heat Map of Person-Days of Beach Going**



**Figure 2.14 Hexagon Heat Map of Person-Days of Photography**



**Figure 2.15 Hexagon Heat Map of Person-Days of Scenic Enjoyment**

### **Expenditure Profiles**

The next set of tables present the expenditures by person-trip, person-day, and total expenditures, respectively. For the Outer Coast the largest trip expense category is food and beverages followed by lodging. However, in Port Angeles, the largest trip expenditure is transportation followed by food and beverages (Table 2.8). Per person-trip expenditures are highest in Port Angeles (\$146.78) when compared to the OCNMS legal definition (\$117.39), OCNMS 2km buffer (\$121.95), and the Outer Coast (\$105.89). However, total expenditures are highest in the OCNMS 2km buffer study area (roughly \$101 million) as opposed to the OCNMS legal (roughly \$31 million) and Port Angeles (nearly \$9 million). Table 2.10 shows the total expenditures in more detail.

**Table 2.8 Expenditures Per Person-trip by Area (2014 \$)**

Expenditure Type	Outer Coast of WA	OCNMS Legal	OCNMS 2 km Buffer	Port Angeles
<b>Transportation</b>	<b>25.49</b>	<b>25.03</b>	<b>28.97</b>	<b>46.52</b>
Parking	0.87	1.06	1.22	0.57
Car Fuel	20.71	20.35	23.19	25.55
Airline Flight	1.01	0.00	0.60	0.00
Bus/Ferry/Train Ticket	1.27	2.63	2.17	12.18
Car Rental	0.90	0.08	0.89	8.22
Boat Fuel	0.73	0.91	0.90	0.00
<b>Lodging</b>	<b>26.87</b>	<b>35.95</b>	<b>39.27</b>	<b>25.33</b>
Lodging/Campsite fee	26.87	35.95	39.27	25.33
<b>Food &amp; Beverages</b>	<b>36.74</b>	<b>34.42</b>	<b>36.05</b>	<b>40.75</b>
Food and Beverages from a Store	14.48	12.33	13.72	9.53
Food and Beverages from a Restaurant or Bar	22.26	22.09	22.33	31.22
<b>Shopping &amp; Sundries</b>	<b>9.83</b>	<b>11.98</b>	<b>11.44</b>	<b>19.10</b>
Shopping & Souvenirs	8.40	9.62	8.90	19.03
Sundries	1.42	2.36	2.54	0.07
<b>Equipment &amp; Other Rental</b>	<b>1.90</b>	<b>5.52</b>	<b>2.55</b>	<b>0.98</b>
Dive Equipment Rental and Airfills	0.32	2.88	0.68	0.70
Equipment Rental	0.76	0.60	0.47	0.00
Boat Rental	0.81	2.04	1.40	0.28
<b>Entrance and Other Fees</b>	<b>4.29</b>	<b>4.34</b>	<b>3.25</b>	<b>3.83</b>
Charter Fees	2.19	2.32	1.43	0.00
Park Entrance, Museum, Aquarium or other entrance fee	1.47	1.17	1.35	2.38
Lessons, Clinics, Camps	0.16	0.00	0.00	0.00
One-day Fishing License Fee	0.35	0.61	0.39	1.45
Boat Ramp fees	0.12	0.24	0.08	0.00
<b>Other Expenditures</b>	<b>0.78</b>	<b>0.15</b>	<b>0.42</b>	<b>10.27</b>
Bait and Tackle	0.45	0.15	0.42	0.00
Casino	0.16	0.00	0.00	0.00
Other (not specified)	0.17	0.00	0.00	10.27
<b>Total</b>	<b>105.89</b>	<b>117.39</b>	<b>121.95</b>	<b>146.78</b>

**Table 2.9 Expenditures Per Person-day by Area (2014 \$)**

Expenditure Type	Outer Coast of WA	OCNMS Legal	OCNMS 2 km Buffer	Port Angeles
<b>Transportation</b>	<b>10.12</b>	<b>9.94</b>	<b>11.50</b>	<b>18.47</b>
Parking	0.34	0.42	0.48	0.23
Car Fuel	8.22	8.08	9.20	10.14
Airline Flight	0.40	0.00	0.24	0.00
Bus/Ferry/Train Ticket	0.50	1.04	0.86	4.83
Car Rental	0.36	0.03	0.35	3.26
Boat Fuel	0.29	0.36	0.36	0.00
<b>Lodging</b>	<b>10.67</b>	<b>14.27</b>	<b>15.59</b>	<b>10.05</b>
Lodging/Campsite fee	10.67	14.27	15.59	10.05
<b>Food &amp; Beverages</b>	<b>14.58</b>	<b>13.66</b>	<b>14.31</b>	<b>16.17</b>
Food and Beverages from a Store	5.75	4.89	5.45	3.78
Food and Beverages from a Restaurant or Bar	8.84	8.77	8.86	12.39
<b>Shopping &amp; Sundries</b>	<b>3.90</b>	<b>4.76</b>	<b>4.54</b>	<b>7.58</b>
Shopping & Souvenirs	3.34	3.82	3.53	7.55
Sundries	0.56	0.94	1.01	0.03
<b>Equipment &amp; Other Rental</b>	<b>0.75</b>	<b>2.19</b>	<b>1.01</b>	<b>0.39</b>
Dive Equipment Rental and Airfills	0.13	1.14	0.27	0.28
Equipment Rental	0.30	0.24	0.19	0.00
Boat Rental	0.32	0.81	0.56	0.11
<b>Entrance and Other Fees</b>	<b>1.70</b>	<b>1.72</b>	<b>1.29</b>	<b>1.52</b>
Charter Fees	0.87	0.92	0.57	0.00
Park Entrance, Museum, Aquarium or other entrance fee	0.58	0.46	0.54	0.94
Lessons, Clinics, Camps	0.06	0.00	0.001	0.00
One-day Fishing License Fee	0.14	0.24	0.15	0.58
Boat Ramp fees	0.05	0.10	0.03	0.00
<b>Other Expenditures</b>	<b>0.31</b>	<b>0.06</b>	<b>0.17</b>	<b>4.08</b>
Bait and Tackle	0.18	0.06	0.17	0.00
Casino	0.06	0.00	0.00	0.00
Other (not specified)	0.07	0.00	0.00	4.08
<b>Total</b>	<b>42.03</b>	<b>46.60</b>	<b>48.41</b>	<b>58.26</b>

**Table 2.10 Total Expenditures by Area (2014 \$)**

Expenditure Type	Outer Coast of WA	OCNMS Legal	OCNMS 2 km Buffer	Port Angeles
<b>Transportation</b>	<b>132,763,597</b>	<b>6,577,859</b>	<b>24,131,691</b>	<b>2,758,450</b>
Parking	4,522,768	278,567	1,016,247	33,799
Car Fuel	107,865,491	5,347,960	19,317,015	1,515,013
Airline Flight	5,256,633	0	499,793	0
Bus/Ferry/Train Ticket	6,601,957	691,161	1,807,586	722,225
Car Rental	4,695,077	21,024	741,360	487,413
Boat Fuel	3,821,670	239,147	749,690	0
<b>Lodging</b>	<b>139,947,826</b>	<b>9,447,624</b>	<b>32,711,478</b>	<b>1,501,968</b>
Lodging/Campsite fee	139,947,826	9,447,624	32,711,478	1,501,968
<b>Food &amp; Beverages</b>	<b>191,383,699</b>	<b>9,045,542</b>	<b>30,029,253</b>	<b>2,416,312</b>
Food and Beverages from a Store	75,433,832	3,240,312	11,428,609	565,091
Food and Beverages from a Restaurant or Bar	115,949,867	5,805,230	18,600,644	1,851,221
<b>Shopping &amp; Sundries</b>	<b>51,181,083</b>	<b>3,148,332</b>	<b>9,529,394</b>	<b>1,132,554</b>
Shopping & Souvenirs	43,768,616	2,528,126	7,413,602	1,128,403
Sundries	7,412,466	620,206	2,115,792	4,151
<b>Equipment &amp; Other Rental</b>	<b>9,901,430</b>	<b>1,450,650</b>	<b>2,124,122</b>	<b>58,110</b>
Dive Equipment Rental and Airfills	1,692,013	756,861	566,433	41,507
Equipment Rental	3,983,245	157,679	391,505	0
Boat Rental	4,226,172	536,110	1,166,185	16,603
<b>Entrance and Other Fees</b>	<b>22,326,849</b>	<b>1,140,548</b>	<b>2,708,880</b>	<b>227,104</b>
Charter Fees	11,419,439	609,694	1,191,174	0
Park Entrance, Museum, Aquarium or other entrance fee	7,651,062	307,475	1,124,535	141,124
Lessons, Clinics, Camps	819,925	0	1,666	0
One-day Fishing License Fee	1,821,950	160,307	324,866	85,979
Boat Ramp fees	614,473	63,072	66,639	0
<b>Other Expenditures</b>	<b>4,054,993</b>	<b>39,420</b>	<b>349,855</b>	<b>608,970</b>
Bait and Tackle	2,359,214	39,420	349,855	0
Casino	818,795	0	0	0
Other (not specified)	876,984	0	0	608,970
<b>Total</b>	<b>551,559,477</b>	<b>30,849,975</b>	<b>101,584,675</b>	<b>8,703,467</b>

### 3. Conclusions and Future Research

#### Partnerships

The scope of the research addressed in this project is beyond the capabilities of any one entity. This project demonstrates the power of partnerships. The State of Washington under their Marine Spatial Planning (MSP) contributed by funding Point97 to undertake the study of recreation uses on the Outer Coast of Washington (OC). The spatial use component allowed ONMS and NCCOS to evaluate how they could join the study to meet the objectives of the Olympic Coast National Marine Sanctuary (OCNMS).

In Fiscal Year (FY) 2015, NCCOS initiated a new strategic effort to provide scientific support to national marine sanctuaries. NCCOS's funding and staff support allowed for not only OCNMS to meet their needs, but strengthen the existing data via expanded sample sizes from the surveys. Expanded samples sizes were doubled for the State of Washington's MSP for recreation uses increasing the reliability of the data. It also allowed for developing estimates of use and other profiles of users (e.g. demographics: expenditures and associated impacts of the local area economies; importance-satisfaction ratings for 25 natural resources attributes, facilities and services; and the non-market economic values of the recreation uses and how those values change with the changes in natural resource attributes and user characteristics).

#### Limitations

Although the study developed a significant body of socioeconomic information, the information was limited to only the recreation use of the OC by the State of Washington households, so it only represents an estimate of this proportion of recreation use.

#### Uses of the Information

***OCNMS Management Plan/Condition Reports.*** The study met several objectives of the OCNMS Management Plan's Socioeconomic component by estimating use for recreation and providing important information for understanding the extent of use and its spatial distribution and understanding how the sanctuary fits in the larger regional context in supplying the recreation ecosystem service. The information will also supply the deep research behind the development of socioeconomic indicators necessary for evaluating the recreation ecosystem service in future OCNMS Condition Reports.

***MSP/Ecosystem-based Management.*** As noted above, the information developed will also support the State of Washington in their MSP process or other agencies engaged in MSP and/or ecosystem-based management, which requires connecting natural resources with how users use those resources and benefit from the protection and restoration of those resources.

***Damage Assessment/Restoration/Resource Protection.*** The State of Washington, NOAA, and other federal agencies are co-trustees for damage assessments when resources are damaged by a responsible party to sue to recover funds for the injuries to compensate those impacted and provide funds for restoration of the resources damaged. The information can also be used in benefit-cost analyses of investments in resource protection and restoration projects where responsible parties for the damage cannot be identified. The non-market economic values support these uses. For private businesses, they can sue for damages for lost income, the market economic measure of income can be used in these cases.

***Education/Outreach.*** Students can benefit by using the information to do Honor's papers, Master's Theses, and Ph.D. Dissertations. This fulfills a NOAA goal of educating the scientists of the future. OCNMS and state and local education and outreach staff can use the information to better understand their users; who are the users, what are they doing, how do they perceive the condition of natural resources they use in doing their activities and how do they value those resources. Further research on the data could explore multiple relationships.

***Business Plans/Marketing.*** Private businesses are often times major users of the type of information developed in this project. The information will support business plans for new businesses or expansion of existing businesses vying to meet the demand for support services recreation users want while undertaking their activities. Bankers or other investors usually want some quantitative information before granting loans to businesses and the information in this study can provide important information for this purpose. Businesses, like agency Education and Outreach staff can develop marketing campaigns by bettering understanding their users. The importance-satisfaction scores will directly support this use.

## **Future Research**

This report covers only demographics of recreation users; detailed uses by type of activity and their spatial distribution; and users' expenditures. The results are mostly descriptive and given the multi-dimensionality of the data, additional multivariate analyses are possible. The Technical Appendix, (Leeworthy et al 2015a) documents all the methods used in estimation for this report.

In addition to the Technical Appendix to this report, there are two other companion reports. The first is a report on the economic impact/contribution to local area economies of the recreation spending (Leeworthy et al, 2016b). The second is a report on the importance-satisfaction ratings of 25 natural resource attributes, facilities and services for the OC and some of the jurisdiction/sub-areas (Leeworthy et al, 2016c). Future reports will address the non-market economic values and how these values change with changes in natural resource attribute conditions and user characteristics. We will provide all the data and documentation to other researchers on request.

As noted above, a major limitation of this study is the inclusion of only State of Washington households. Currently, we do not know what portion of the recreation use is accounted for by State of Washington households on the OC. Given the existence of both the Olympic National Park (ONP) and the OCNMS, we expect this could be a significant component of total recreation use and value. To address some of the limitations of this study relative to the study population, in meetings with the ONP and the four Coastal Treaty Tribes, we discussed how we could supplement our study with a Social Values Mapping survey (Sherrouse et al, 2011) to get a more complete profile of recreational use and value. The current study was based on a random sample of Washington households and done through an Internet Panel survey. Members of the four Coastal Treaty Tribes had a low probability of inclusion and the members of the tribes are not likely represented. The Social Values Mapping survey is an on-site survey and could be designed to make sure we are both meeting the objectives of the ONP and the Coastal Treaty Tribes and ensuring good representation of tribal members use and values. This study would also provide more complete information in assessing the recreation ecosystem service for OCNMS Condition Reports by providing Human Dimension non-economic measures of recreation and other cultural ecosystem services. This could also be useful to other agencies engaged in ecosystem-based management for the resources in the OC.

## **4. Glossary Terms**

Person-trip: one person who makes a trip to the Outer Coast of Washington for recreation.

Person-day: One person doing any recreation activity for a whole day or any part of a day.

Recreator: Anyone who did at least one recreation activity in the Outer Coast of Washington.

## 5. References

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